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ON THE PITHECOID TYPE OF EAR IN MAN.

HOWARD AYERS.

THERE have been relatively few contributions to our knowledge of the development of the external ear in man which give enough attention to such details as would render them useful to the anthropologist. For this and other reasons the following observations on the condition of the external ears in a three-months full-blooded negro foetus will doubtless be of interest, since they show in such an unmistakable manner the occurrence of a pithecid ear in the human embryo, and thus give additional force to the conclusion derived from a study of comparative anatomy that the human races have descended from a Simian condition of structure. As Professor G. Schwalbe has already pointed out,¹ there are two methods which we may use in arriving at a knowledge of the past history of the human external ear. The first one, the method of comparative anatomy, has been most successfully employed, largely on account of the greater abundance of material for study; while the second method, that of embryology, has as yet yielded fewer results. Sometimes one, sometimes the other method gives us the best information regarding special facts, and it is only by the use of the knowledge gained from both sources that we may hope to reconstruct the phylogeny of the human ear.

Schwalbe has carried out the analysis of the mammalian ear from the comparative anatomical standpoint in a masterly way, and has shown that the Darwinian point, far from being of rare occurrence in civilized man, is present in three-fourths of all male ears and in nearly three-fourths of all male individuals, whereas it is present in less than one-half the total number of female individuals and in only about one-third of the whole number of female ears examined.

¹ Schwalbe, G., "Beiträge zur Anthropologie des Ohres," *Internat. Beiträge zur wiss. Medicin.* Bd. i. 1891.

The presence of this pithecid as distinguished from human character is thus the rule and not the exception among human males, reversing in this respect the general law of development among animals, that the female remains in a more primitive state of development than the male.

The ratio of the reduction of the ear in man beyond what we find in the lower apes is that of five to four in favor of the female.

It is interesting to note that while Schwalbe found the left ear to be, in general, more reduced, both in men and women, in the case which is here presented, it is the left ear which shows the *Cercopithecus* form, while the right ear approaches more nearly the normal human type.

This case is especially interesting on account of the additional information it gives of the details of the process of reduction of the auricular apex.

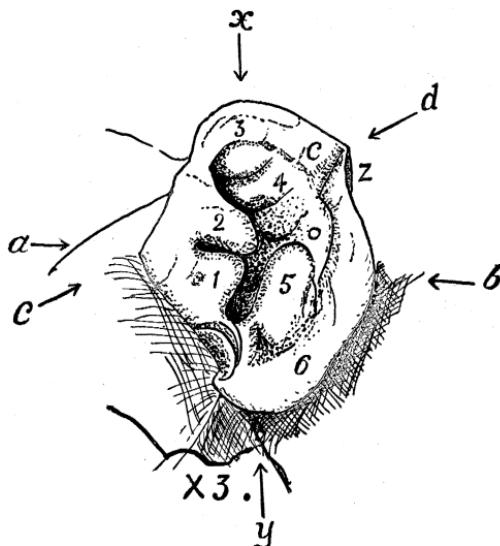
The apex of the ear lies upon the unrolled posterior border of the ear, above the anthelical line. It lies at the outer end of and forms the projecting spout of a trough which leads from the posterior (external) edge of the helical border forwards, downwards, and inwards, across the anthelical depression into the depths of the fossa angularis. This groove I have never seen in an adult ear, and only the faintest indications in other embryonic ears which have come under my observation.

Opposite the groove the mesal face of the lobe is carried out into a ridge which extends from Darwin's point towards the base of the ear, but does not reach it, fading out into the general level of this surface of the pinna.

The apical part of this ridge is shown in the figure at *z*, and can be seen here because of the slight out-flexure of the free border of the helix just below the Darwinian point. The border immediately above the apex shows no trace of flexure out of the plane of the pinna. The figure is carefully drawn to scale, enlarged three diameters. The shading, however, does not do justice to the original. The axes indicated by the arrows are the only ones I have thought worth while measuring, but any other measurements are readily had from the figure.

The axis $x-y$, or the physiognomic axis, measures 13 mm. The true long axis of the ear $c-d$ is 10 mm. in length, while the greatest breadth along the axis $a-b$ is 9.75 mm.

The lobe of the ear is sharply marked off from the general contour at its insertion into the side of the head by an indentation which is shaded too heavily in the figure.



EXPLANATION OF THE FIGURE.

- 1. Tragus.
- 2. { the modified embryonic tubercles forming the helix.
- 3. c.
- 4. Anthelix.
- 5. Antitragus.
- 6. Taenia lobularis.
- z. Posterior fold of the pinna, its apex forming Darwin's point.
- $a-b$. The true long axis of the ear.
- $c-d$. Axis of the greatest breadth.
- $x-y$. Vertical or physiognomic axis.
- Enclosed between 1, 2, and 5, the fossa angularis.
- Extending across from 2 to o, the crus helicis.
- Extending across from 2 to 5, the crus supra-tragicus.
- The arrow x points to the Saturnian point.
- Connecting 2 and o, the crus helicis.
- Connecting 2 and 5, the crus supra-tragicum, only traces of which are as yet present.

The two ears of the embryo are not alike in that the left ear displays the reverisionary character to a much greater extent than the right.

The figure represents the left ear enlarged three diameters,

and it will be noticed that of the primary auricular tubercles 1, 2, 4, and 5 are especially prominent, as is usually the case at this stage of growth. But tubercle 4 is somewhat more prominent than ordinary. This is apparently not accidental, but is part of the general enlargement along the axis $c-d$, the original or ancestral long axis of the ear. Being in the third month of development, this ear presents us with the initial steps of the growth of the long axis of the ear, and of course it is during this period of development that we should expect to find ancestral traits best defined.

A series of observations which I have been able to make on the ears of very young children, for the purpose of locating and noting the degree of reduction of the Darwinian point, enabled me to study another character frequently associated with the Darwinian point which I believe has hitherto escaped notice. It is the presence of a tuft of relatively long hairs upon the Darwinian point.

This hair tuft seems to disappear later, as I have not observed it on any adult ear, though no extended series of adult ears has been sufficiently closely observed by me to satisfactorily settle the point.

Owing to the anthropological significance of this pencil or tuft of hairs, I propose for it the name Darwinian tuft. It is undoubtedly a remnant of the apical hair tuft commonly developed in the mammalia which often reaches special size as in the lynx.

UNIVERSITY OF MISSOURI,
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